

L7 ANSWER 4 OF 10 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on
STN

AN 96:544888 SCISEARCH

GA The Genuine Article (R) Number: UX582

TI AFRICAN-GREEN MONKEY KIDNEY (VERO) CELLS PROVIDE AN ALTERNATIVE HOST-CELL
SYSTEM FOR **INFLUENZA-A** AND **INFLUENZA-B** VIRUSES

AU GOVORKOVA E A; MURTI G; MEIGNIER B; DETAISNE C; WEBSTER R G (Reprint)

CS ST JUDE CHILDRENS HOSP, DEPT VIROL & MOLEC BIOL, 332 N LAUDERDALE ST,
MEMPHIS, TN, 38105 (Reprint); ST JUDE CHILDRENS HOSP, DEPT VIROL & MOLEC
BIOL, MEMPHIS, TN, 38105; DI IVANOVSKII INST VIROL, MOSCOW 123098, RUSSIA;
PASTEUR MERIEUX, F-69280 MARCY LETOILE, FRANCE; UNIV TENNESSEE, DEPT
PATHOL, MEMPHIS, TN, 38163

CYA USA; RUSSIA; FRANCE

SO JOURNAL OF VIROLOGY, (AUG 1996) Vol. 70, No. 8, pp. 5519-5524.

ISSN: 0022-538X.

DT Article; Journal

FS LIFE

LA ENGLISH

REC Reference Count: 32

AB The preparation of live, attenuated human **influenza** virus
vaccines and of large quantities of inactivated vaccines after the
emergence or reemergence of a pandemic **influenza** virus will
require an alternative host cell system, because embryonated chicken eggs
will likely be insufficient and suboptimal. Preliminary studies indicated
that an African green monkey kidney cell line (Vero) is a suitable system
for the primary isolation and cultivation of **influenza** A viruses
(E. A. Govorkova, N. V. Kaverin, L. V. Gubareva, B. Meignier, and R. G.
Webster, J. Infect. Dis. 172:250-253, 1995). We now demonstrate for the
first time that Vero cells are suitable for isolation and productive
replication of **influenza** B viruses and determine the biological
and genetic properties of both **influenza** A and B viruses in Vero
cells; additionally, we characterize the receptors on Vero cells
compared with those on **Madin-Darby canine**
kidney (MDCK) cells. Sequence analysis indicated that the
hemagglutinin of Vero cell-derived **influenza** B viruses was
identical to that of MDCK-grown counterparts but differed from that of
egg-grown viruses at amino acid positions 196 to 198. Fluorescence-
activated cell sorting analysis showed that although Vero cells possess
predominantly alpha 2,3 galactose-linked sialic acid, they are fully
susceptible to infection with either human **influenza** A or B
viruses. Moreover, all virus-specific polypeptides were synthesized in the
same proportions in Vero cells as in MDCK cells. Electron microscopic and
immunofluorescence studies confirmed that infected Vero cells undergo the
same morphological changes as do other polarized epithelial cells. Taken
together, these results indicate that Vero cell lines could serve as an
alternative host system for the cultivation of **influenza** A and B
viruses, providing adequate quantities of either virus to meet the vaccine

*Computer-Aided Design
 Dogs
 Kidney Neoplasms
 *L-Lactate Dehydrogenase: ME, metabolism
 Lung Neoplasms
 Rats
 Software
 Tumor Cells, Cultured
 Volatilization
 CN 0 (Anesthetics, Inhalation); EC 1.1.1.27 (L-Lactate Dehydrogenase)

L4 ANSWER 15 OF 17 MEDLINE on STN
 AN 93055224 MEDLINE
 DN PubMed ID: 1331151
 TI Enhanced detection of respiratory viruses using the shell vial technique and monoclonal antibodies.
 AU Lee S H; Boutilier J E; MacDonald M A; Forward K R
 CS Department of Microbiology, Victoria General Hospital, Halifax, Nova Scotia, Canada.
 SO Journal of virological methods, (1992 Sep) 39 (1-2) 39-46.
 Journal code: 8005839. ISSN: 0166-0934.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199212
 ED Entered STN: 19930122
 Last Updated on STN: 19970203
 Entered Medline: 19921203

AB The shell vial technique using **A549** and **MDCK** cells, coupled with the use of Bartels respiratory viral monoclonal antibodies, was evaluated initially for the detection of 28 previously isolated respiratory viruses. All viruses were recovered and correctly identified. The shell vial-monoclonal antibody technique was then evaluated for virus isolation from 338 respiratory specimens and compared with the conventional tube method. Both methods gave rise to a total of 83 virus isolates. Of these isolates, 68 (20.1%) were isolated and identified by the shell vial-monoclonal method; 60 (17.8%) were culture-positive by the conventional tube method; forty-five (13.3%) were positive by both methods. The shell vial-monoclonal antibody method yielded 12 isolates of influenza A, two isolates of parainfluenza type 3 and one each of parainfluenza types 1 and 3, which were missed by the conventional tube method, indicating the superior sensitivity and specificity of the shell vial-monoclonal antibody method (Chi-square analysis, $P = 0.001$) for the detection of these viruses. Of the 50 RSV isolates, 29 were detected by both methods and there were 21 discrepancies between the two methods. The shell vial-monoclonal antibody method also improved the turn-around time for the respiratory virus groups.

CT Check Tags: Human
 Adenoviruses, Human: IM, immunology
 Adenoviruses, Human: IP, isolation & purification
 Animals
 *Antibodies, Monoclonal
 Cell Line
 Dogs
 Evaluation Studies
 Influenza A Virus,

d his

(FILE 'HOME' ENTERED AT 14:23:11 ON 22 DEC 2004)

FILE 'MEDLINE' ENTERED AT 14:23:19 ON 22 DEC 2004

L1 2115 S MADIN-DARBY CANINE KIDNEY
L2 243 S L1 AND INFLUENZA
L3 4 S L1 AND RSV
L4 423547 S 1997>PY>1995
L5 8 S L2 AND L4

FILE 'SCISEARCH' ENTERED AT 14:30:38 ON 22 DEC 2004

L6 195 S L2
L7 10 S L4 AND L6

AN 1998:754949 CAPLUS
 DN 130:152470
 ED Entered STN: 02 Dec 1998
 TI Cell lines of pulmonary and non-pulmonary origin as tools to study the effects of house dust mite proteinases on the regulation of epithelial permeability
 AU Winton, H. L.; Wan, H.; Cannell, M. B.; Gruenert, D. C.; Thompson, P. J.; Garrod, D. R.; Stewart, G. A.; Robinson, C.
 CS Department of Pharmacology & Clinical Pharmacology, St George's Hospital Medical School, London, SW17 0RE, UK
 SO Clinical and Experimental Allergy (1998), 28(10), 1273-1285
 CODEN: CLEAEN; ISSN: 0954-7894
 PB Blackwell Science Ltd.
 DT Journal
 LA English
 CC 15-9 (Immunochemistry)
 AB Allergenic and non-allergenic proteinases from house dust mites (HDM) cause loss of adhesion between airway epithelial cells that may result in a loss of functional cohesion between the cells and thus assist in allergen presentation. Improved cellular assay systems are needed to ascertain the mechanisms involved. The authors surveyed a series of epithelial cell lines (Calu-3, 16HBE14o-, NCI-H292 and A549 from human airways, and MDCK from dog kidney) and established their utility for studies of the effects of HDM proteinases from D. pteronyssinus on epithelial permeability. In addition, the authors developed an improved method for measuring changes in epithelial permeability induced by HDM proteinases and other provocants. The permeability of epithelial monolayer cultures to mannitol was calculated from measurements of clearance using a technique that permits math. estimation and reduction of non-cellular diffusional constraints. Permeability was studied under control conditions and after perturbation of monolayers with HDM proteinases (separated into serine- and cysteine-proteinase classes) or chelation of extracellular Ca²⁺. Fluorescent antibody staining was used to investigate whether the cells expressed tight junctions (staining of ZO-1), desmosomes (staining of desmoplakin) and zonulae adherentes (staining of E-cadherin). The Calu-3 line was identified as an airway cell line that expressed functional tight junctions, desmosomes and zonulae adherentes. Calu-3 monolayers exhibited a low clearance and permeability to mannitol, similar to that seen in the extensively characterized MDCK cell line. Clearance and permeability were significantly increased by treatment with either HDM proteinase fraction or by calcium chelation. 16HBE14o- cells also had a low permeability to mannitol under control conditions and expressed a similar repertoire of functional proteins from major intercellular junctions. In contrast, NCI-H292 and A549 cell lines were functionally deficient in tight junctions, although they did express desmosomes and zonulae adherentes to a greater extent. Epithelial permeability was a more appropriate and sensitive index of epithelial perturbation than was tracer clearance. These results suggest that the Calu-3 and 16HBE14o- cell lines are useful tools in studying the mechanism of HDM proteinases on airway epithelial cell function. HDM proteinases of both cysteine and serine mechanistic classes were found to perturb epithelial adhesion and function.
 ST house dust mite proteinase airway epithelium permeability
 IT Animal cell line
 (16HBE14o-; house dust mite proteinase effects on permeability of airway epithelium cell lines)
 IT Animal cell line
 (Calu-3; house dust mite proteinase effects on permeability of airway epithelium cell lines)

d his

(FILE 'HOME' ENTERED AT 08:05:27 ON 22 DEC 2004)

FILE 'MEDLINE' ENTERED AT 08:05:35 ON 22 DEC 2004

L1 3554 S MDCK
L2 3035 S A549
L3 125 S H292
L4 17 S L1 AND L2
L5 1 S L1 AND L3
L6 1 S L1 AND L2 AND L3

FILE 'BIOSIS' ENTERED AT 08:17:35 ON 22 DEC 2004

L7 5 S L1 AND L3
L8 45 S L1 AND L2
L9 1 S L1 AND L2 AND L3

FILE 'CAPLUS' ENTERED AT 08:20:14 ON 22 DEC 2004

L10 4 S L1 AND L3

FILE 'MEDLINE' ENTERED AT 08:22:39 ON 22 DEC 2004

FILE 'SCISEARCH' ENTERED AT 08:23:12 ON 22 DEC 2004

L11 19 S L1 AND L2
L12 1 S L1 AND L3

FILE 'MEDLINE' ENTERED AT 08:23:47 ON 22 DEC 2004

=> d his

(FILE 'HOME' ENTERED AT 13:42:21 ON 22 DEC 2004)

FILE 'MEDLINE' ENTERED AT 13:42:29 ON 22 DEC 2004

L1	2115 S	MADIN-DARBY CANINE KIDNEY
L2	6 S	L1 AND A549
L3	0 S	L1 AND H292
L4	0 S	CCL-1848
L5	56 S	HUMAN LUNG EPITHELIAL CELL LINE
L6	1 S	L5 AND L1
L7	0 S	L5 AND MDCK
L8	1 S	MDCK AND H292

FILE 'BIOSIS' ENTERED AT 13:50:13 ON 22 DEC 2004

L9	0 S	L1 AND L5
L10	23 S	L1 AND A549
L11	3 S	L1 AND H292

FILE 'MEDLINE' ENTERED AT 13:53:25 ON 22 DEC 2004

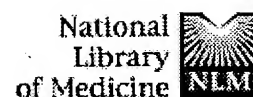
WEST Search History

[Hide Items](#)[Restore](#)[Clear](#)[Cancel](#)

DATE: Wednesday, December 22, 2004

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
		<i>DB=EPAB; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L14	WO-200111335-A2.did.	0
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L13	5738985.pn.	1
<input type="checkbox"/>	L12	5110906.pn.	1
<input type="checkbox"/>	L11	US-6503703-B1.did.	1
		<i>DB=DWPI; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L10	Madin-Darby canine kidney	10
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L9	Madin-Darby canine kidney.clm.	7
<input type="checkbox"/>	L8	Madin-Darby canine kidney and RSV.clm.	4
<input type="checkbox"/>	L7	Madin-Darby canine kidney.clm.	7
<input type="checkbox"/>	L6	Madin-Darby canine kidney and influenza.clm.	48
<input type="checkbox"/>	L5	Madin-Darby canine kidney and influenza	109
<input type="checkbox"/>	L4	Madin-Darby canine kidney and RSV	33
<input type="checkbox"/>	L3	Madin-Darby canine kidney	263
<input type="checkbox"/>	L2	H292.clm.	7
<input type="checkbox"/>	L1	H292	53

END OF SEARCH HISTORY



Entrez PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Boo
Search PubMed for Go Clear

Limits Preview/Index History Clipboard Details

Display Summary Show: 20 Sort Send to Text

About Entrez

Items 1 - 20 of 111

Page 1 of 6 Next

Text Version

Entrez PubMed

Overview
Help | FAQ
Tutorial
New/Noteworthy
E-Utilities

PubMed Services

Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources

Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

☐ 1: [Lee SH, Boutilier JE, MacDonald MA, Forward KR.](#) Related Articles, Links



Enhanced detection of respiratory viruses using the shell vial technique and monoclonal antibodies.

J Virol Methods. 1992 Sep;39(1-2):39-46.

PMID: 1331151 [PubMed - indexed for MEDLINE]

☐ 2: [Olsen MA, Shuck KM, Sambol AR, Flor SM, O'Brien J, Cabrera BJ.](#) Related Articles, Links



Isolation of seven respiratory viruses in shell vials: a practical and highly sensitive method.

J Clin Microbiol. 1993 Feb;31(2):422-5.

PMID: 8381816 [PubMed - indexed for MEDLINE]

☐ 3: [Matthey S, Nicholson D, Ruhs S, Alden B, Knock M, Schultz K, Schmucker A.](#) Related Articles, Links



Rapid detection of respiratory viruses by shell vial culture and direct staining by using pooled and individual monoclonal antibodies.

J Clin Microbiol. 1992 Mar;30(3):540-4.

PMID: 1372616 [PubMed - indexed for MEDLINE]

☐ 4: [Schirm J, Luijt DS, Pastoor GW, Mandema JM, Schroder FP.](#) Related Articles, Links



Rapid detection of respiratory viruses using mixtures of monoclonal antibodies on shell vial cultures.

J Med Virol. 1992 Oct;38(2):147-51.

PMID: 1334129 [PubMed - indexed for MEDLINE]

☐ 5: [Rabalais GP, Stout GG, Ladd KL, Cost KM.](#) Related Articles, Links



Rapid diagnosis of respiratory viral infections by using a shell vial assay and monoclonal antibody pool.

J Clin Microbiol. 1992 Jun;30(6):1505-8.

PMID: 1624569 [PubMed - indexed for MEDLINE]

☐ 6: [Zavattoni M, Percivalle E, Cattaneo E, Revello MG, Torsellini M, Gerna G.](#) Related Articles, Links



Optimized detection of respiratory viruses in nasopharyngeal secretions.

New Microbiol. 2003 Apr;26(2):133-40.

PMID: 12737194 [PubMed - indexed for MEDLINE]

☐ 7: [Smith MC, Creutz C, Huang YT.](#) Related Articles, Links



Detection of respiratory syncytial virus in nasopharyngeal secretions by shell vial technique.

J Clin Microbiol. 1991 Mar;29(3):463-5.

PMID: 2037662 [PubMed - indexed for MEDLINE]

☐ **8:** [Johnston SL, Siegel CS.](#)[Related Articles, Links](#)

Evaluation of direct immunofluorescence, enzyme immunoassay, centrifugation culture, and conventional culture for the detection of respiratory syncytial virus.

J Clin Microbiol. 1990 Nov;28(11):2394-7.

PMID: 2254415 [PubMed - indexed for MEDLINE]

☐ **9:** [Olsen MA, Shuck KM, Sambol AR.](#)[Related Articles, Links](#)

Evaluation of Abbott TestPack RSV for the diagnosis of respiratory syncytial virus infections.

Diagn Microbiol Infect Dis. 1993 Feb;16(2):105-9.

PMID: 8467621 [PubMed - indexed for MEDLINE]

☐ **10:** [Bartholoma NY, Forbes BA.](#)[Related Articles, Links](#)

Successful use of shell vial centrifugation and 16 to 18-hour immunofluorescent staining for the detection of influenza A and B in clinical specimens.

Am J Clin Pathol. 1989 Oct;92(4):487-90.

PMID: 2679041 [PubMed - indexed for MEDLINE]

☐ **11:** [Navarro-Mari JM, Sanbonmatsu-Gamez S, Perez-Ruiz M, De La Rosa-Fraile M.](#)[Related Articles, Links](#)

Rapid detection of respiratory viruses by shell vial assay using simultaneous culture of HEP-2, LLC-MK2, and MDCK cells in a single vial.

J Clin Microbiol. 1999 Jul;37(7):2346-7. Erratum in: J Clin Microbiol 1999 Oct;37(10):3436.

PMID: 10364611 [PubMed - indexed for MEDLINE]

☐ **12:** [Ray CG, Minnich LL.](#)[Related Articles, Links](#)

Efficiency of immunofluorescence for rapid detection of common respiratory viruses.

J Clin Microbiol. 1987 Feb;25(2):355-7.

PMID: 3029168 [PubMed - indexed for MEDLINE]

☐ **13:** [Brinker JP, Doern GV.](#)[Related Articles, Links](#)

A comparison of commercially available monoclonal antibodies for direct and indirect immunofluorescence culture confirmation and direct detection of parainfluenza viruses.

Diagn Microbiol Infect Dis. 1992 Nov-Dec;15(8):669-72.

PMID: 1335862 [PubMed - indexed for MEDLINE]

☐ **14:** [Hierholzer JC, Bingham PG, Coombs RA, Johansson KH, Anderson LJ, Halonen PE.](#)[Related Articles, Links](#)

Comparison of monoclonal antibody time-resolved fluoroimmunoassay with monoclonal antibody capture-biotinylated detector enzyme immunoassay for respiratory syncytial virus and parainfluenza virus antigen detection.

J Clin Microbiol. 1989 Jun;27(6):1243-9.

PMID: 2546973 [PubMed - indexed for MEDLINE]

☐ **15:** [Barenfanger J, Drake C, Mueller T, Troutt T, O'Brien J, Guttman K.](#)[Related Articles, Links](#)

R-Mix cells are faster, at least as sensitive and marginally more costly than



conventional cell lines for the detection of respiratory viruses.
J Clin Virol. 2001 Aug;22(1):101-10.
PMID: 11418357 [PubMed - indexed for MEDLINE]

☐ 16: [Stout C, Murphy MD, Lawrence S, Julian S.](#)

[Related Articles](#), [Links](#)



Evaluation of a monoclonal antibody pool for rapid diagnosis of respiratory viral infections.
J Clin Microbiol. 1989 Mar;27(3):448-52.
PMID: 2541165 [PubMed - indexed for MEDLINE]

☐ 17: [Klespies SL, Cebula DE, Kelley CL, Galehouse D, Maurer CC.](#)

[Related Articles](#), [Links](#)



Detection of enteroviruses from clinical specimens by spin amplification shell vial culture and monoclonal antibody assay.
J Clin Microbiol. 1996 Jun;34(6):1465-7.
PMID: 8735099 [PubMed - indexed for MEDLINE]

☐ 18: [Shih SR, Tsao KC, Ning HC, Huang YC, Lin TY.](#)

[Related Articles](#), [Links](#)



Diagnosis of respiratory tract viruses in 24 h by immunofluorescent staining of shell vial cultures containing Madin-Darby Canine Kidney (MDCK) cells.
J Virol Methods. 1999 Aug;81(1-2):77-81.
PMID: 10488764 [PubMed - indexed for MEDLINE]

☐ 19: [Alexander R, Lamb D, White D, Wentzel T, Politis S, Rijsburger J, van Ruyven D, Kelly N, Garland SM.](#)

[Related Articles](#), [Links](#)



'RETCIF': a rapid, sensitive method for detection of viruses, applicable for large numbers of clinical samples.
J Virol Methods. 2001 Sep;97(1-2):77-85.
PMID: 11483219 [PubMed - indexed for MEDLINE]

☐ 20: [Van Doornum GJ, De Jong JC.](#)

[Related Articles](#), [Links](#)



Rapid shell vial culture technique for detection of enteroviruses and adenoviruses in fecal specimens: comparison with conventional virus isolation method.
J Clin Microbiol. 1998 Oct;36(10):2865-8.
PMID: 9738034 [PubMed - indexed for MEDLINE]

Items 1 - 20 of 111

Page 1 of 6 Next

Display

Summary

Show:

20

Sort

Send to

Text

[Write to the Help Desk](#)

[NCBI](#) | [NLM](#) | [NIH](#)

[Department of Health & Human Services](#)

[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

Dec 13 2004 14:18:14

WEST Search History

DATE: Wednesday, December 22, 2004

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
	<i>DB=PGPB; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L17	Madin-Darby canine kidney cells and mixed cells	1
<input type="checkbox"/>	L16	Madin-Darby canine kidney cells and mixed	42
<input type="checkbox"/>	L15	Madin-Darby canine kidney cells	69
	<i>DB=USPT; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L14	Madin-Darby canine kidney cells and mixed cells	0
<input type="checkbox"/>	L13	Madin-Darby canine kidney cells and mixed cell line	0
<input type="checkbox"/>	L12	Madin-Darby canine kidney cells and mixed cellline	0
<input type="checkbox"/>	L11	Madin-Darby canine kidney cells and mixed	93
<input type="checkbox"/>	L10	Madin-Darby canine kidney cells and mixture	118
<input type="checkbox"/>	L9	Madin-Darby canine kidney cells.clm.	4
<input type="checkbox"/>	L8	Madin-Darby canine kidney cells	131
	<i>DB=DWPI; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L7	Madin-Darby canine kidney cells	4
<input type="checkbox"/>	L6	MDCK and A549 and H292	1
	<i>DB=JPAB; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L5	MDCK and A549 and H292	0
	<i>DB=EPAB; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L4	MDCK and A549 and H292	0
	<i>DB=PGPB; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L3	MDCK and A549 and H292.clm.	5
	<i>DB=USPT; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L2	MDCK and A549 and H292.clm.	4
<input type="checkbox"/>	L1	MDCK and A549 and H292	12

END OF SEARCH HISTORY

WEST Search History

DATE: Wednesday, December 22, 2004

Hide?	Set Name	Query	Hit Count
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L18	RMK cells	10
<input type="checkbox"/>	L17	RMK.clm.	0
<input type="checkbox"/>	L16	MRK cells	0
<input type="checkbox"/>	L15	MRK.clm.	1
		<i>DB=EPAB; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L14	WO-200111335-A2.did.	0
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L13	5738985.pn.	1
<input type="checkbox"/>	L12	5110906.pn.	1
<input type="checkbox"/>	L11	US-6503703-B1.did.	1
		<i>DB=DWPI; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L10	Madin-Darby canine kidney	10
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L9	Madin-Darby canine kidney.clm.	7
<input type="checkbox"/>	L8	Madin-Darby canine kidney and RSV.clm.	4
<input type="checkbox"/>	L7	Madin-Darby canine kidney.clm.	7
<input type="checkbox"/>	L6	Madin-Darby canine kidney and influenza.clm.	48
<input type="checkbox"/>	L5	Madin-Darby canine kidney and influenza	109
<input type="checkbox"/>	L4	Madin-Darby canine kidney and RSV	33
<input type="checkbox"/>	L3	Madin-Darby canine kidney	263
<input type="checkbox"/>	L2	H292.clm.	7
<input type="checkbox"/>	L1	H292	53

END OF SEARCH HISTORY

Hit List

Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs
Generate OACS				

Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 6573080 B2

L2: Entry 1 of 4

File: USPT

Jun 3, 2003

US-PAT-NO: 6573080

DOCUMENT-IDENTIFIER: US 6573080 B2

TITLE: Mixed cell diagnostic systems

DATE-ISSUED: June 3, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Scholl; David R.	Athens	OH		
Huang; Yung T.	Richmond Heights	OH		
Goodrum; Patricia Gail Ray	Athens	OH		

US-CL-CURRENT: 435/235.1; 435/325, 435/5, 435/6, 435/8

Full	Title	Citation	Front	Review	Classification	Date	Reference					Claims	RWC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	--	--	--	--	--------	-----	----------

☐ 2. Document ID: US 6406842 B2

L2: Entry 2 of 4

File: USPT

Jun 18, 2002

US-PAT-NO: 6406842

DOCUMENT-IDENTIFIER: US 6406842 B2

TITLE: Mixed cell diagnostic systems

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Scholl; David R.	Athens	OH		
Huang; Yung T.	Richmond Heights	OH		
Goodrum; Patricia Gail Ray	Athens	OH		

US-CL-CURRENT: 435/5; 435/235.1, 435/325, 435/8

Full	Title	Citation	Front	Review	Classification	Date	Reference					Claims	RWC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	--	--	--	--	--------	-----	----------

☐ 3. Document ID: US 6376172 B1

L2: Entry 3 of 4

File: USPT

Apr 23, 2002

US-PAT-NO: 6376172

DOCUMENT-IDENTIFIER: US 6376172 B1

TITLE: Mixed cell diagnostic systems

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Scholl; David R.	Athens	OH		
Huang; Yung T.	Richmond Heights	OH		
Goodrum; Patricia Gail Ray	Athens	OH		

US-CL-CURRENT: 435/5; 435/235.1, 435/325, 435/8

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw. D
------	-------	----------	-------	--------	----------------	------	-----------	--	--	--------	------	---------

☐ 4. Document ID: US 6280928 B1

L2: Entry 4 of 4

File: USPT

Aug 28, 2001

US-PAT-NO: 6280928

DOCUMENT-IDENTIFIER: US 6280928 B1

TITLE: Mixed cell diagnostic systems

DATE-ISSUED: August 28, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Scholl; David R.	Athens	OH		
Huang; Yung T.	Richmond Heights	OH		
Goodrum; Patricia Gail Ray	Athens	OH		

US-CL-CURRENT: 435/5; 435/235.1, 435/325, 435/8

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw. D
------	-------	----------	-------	--------	----------------	------	-----------	--	--	--------	------	---------

Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
-------	---------------------	-------	----------	-----------	---------------

Terms	Documents
MDCK and A549 and H292.clm.	4